



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0141; Project Identifier MCAI-2021-01052-T; Amendment 39-22283; AD 2022-26-04]**

**RIN 2120-AA64**

**Airworthiness Directives; MHI RJ Aviation ULC (Type Certificate Previously Held by Bombardier, Inc.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all MHI RJ Aviation ULC Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes. This AD was prompted by a report of an oxygen-fed ground fire event potentially caused by electrical arcing from a faulty surround light wire on the third crew member's (observer) oxygen mask. This AD was also prompted by the determination that additional inspections and a bracket trim are needed to address the unsafe condition. This AD requires an inspection for discrepancies of the observer's oxygen mask stowage box and stowage compartment, oxygen hose connections and routing, and the associated electrical harness, and corrective actions if necessary; and modifying the oxygen mask flexible lamp harness, mounting plate, and compartment panel, including rerouting the electrical harness and applying protective sealant. This AD also requires an inspection for correct installation of the flexible lamp assembly; trimming and reidentifying a bracket; and for certain airplanes, an inspection for damage of the wire harness assembly; and applicable

corrective actions. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0141; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact MHI RJ Aviation Group, Customer Response Center, 3655 Ave. des Grandes-Tourelles, Suite 110, Boisbriand, Québec J7H 0E2 Canada; North America toll-free telephone 833-990-7272 or direct-dial telephone 450-990-7272; fax 514-855-8501; email [thd.crj@mhjrj.com](mailto:thd.crj@mhjrj.com); website [mhjrj.com](https://www.mhjrj.com).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0141.

**FOR FURTHER INFORMATION CONTACT:** Gabriel Kim, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all MHI RJ Aviation ULC Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes. The NPRM published in the *Federal Register* on February 25, 2022 (87 FR 10752). The NPRM was prompted by AD CF-2021-32, dated September 17, 2021, issued by Transport Canada, which is the aviation authority for Canada (Transport Canada AD CF-2021-32). Transport Canada AD CF-2021-32 states that an oxygen-fed ground fire event was potentially caused by electrical arcing from a faulty surround light wire on the third crew member's (observer) oxygen mask. An investigation determined that the oxygen supply hose connecting to the rear of the observer oxygen mask box assembly could be subject to chafing damage.

In the NPRM, the FAA proposed to require an inspection for discrepancies of the observer's oxygen mask stowage box and storage compartment, oxygen hose connections and routing, and the associated electrical harness, and corrective actions if necessary; and modifying the oxygen mask flexible lamp harness, mounting plate, and compartment panel, including rerouting the electrical harness and applying protective sealant.

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 by adding an AD that would apply to all MHI RJ Aviation ULC Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes. The SNPRM published in the *Federal Register* on October 21, 2022 (87 FR 63970). The SNPRM was prompted by Transport Canada AD CF-2021-32R1, dated July 25, 2022 (also referred to as the

MCAI). The MCAI states that since Transport Canada AD CF-2021-32 was issued, an operator reporting a fouling condition between the power feed wires for the stowage box light strip and an existing aluminum bracket in the entrance monument mask stowage compartment. The SNPRM was also prompted by the determination that additional inspections and a bracket trim are needed to address the unsafe condition. In the SNPRM, the FAA again proposed to require an inspection for discrepancies of the observer's oxygen mask stowage box and storage compartment, oxygen hose connections and routing, and the associated electrical harness, and corrective actions if necessary; and modifying the oxygen mask flexible lamp harness, mounting plate, and compartment panel, including rerouting the electrical harness and applying protective sealant. In the SNPRM, the FAA further proposed to require an inspection for correct installation of the flexible lamp assembly; trimming and reidentifying a bracket; and for certain airplanes, an inspection for damage of the wire harness assembly; and applicable corrective actions. The FAA is issuing this AD to address possible damage to the observer oxygen mask supply hoses and a potential for an oxygen-fed fire in the vicinity of the observer oxygen mask storage compartment.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0141.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received a comment from The Air Line Pilots Association, International (ALPA), who supported the SNPRM without change.

### **Conclusion**

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition

described in the MCAI referenced above. The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on this product. Except for minor editorial changes, this AD is adopted as proposed in the SNPRM. None of the changes will increase the economic burden on any operator.

#### **Related Service Information under 1 CFR Part 51**

The FAA reviewed MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022. This service information specifies procedures for doing a general visual inspection for discrepancies, including elbow fitting clocking (rotation), sealing tape installed in a certain location, wire damage (e.g., cuts, nicks, kinks, insulation damage) of the observer's oxygen mask stowage box and storage compartment, the observer's mask oxygen hose connections, the hose routing, and the associated electrical harness, and applicable corrective actions; and modifying the oxygen mask flexible lamp harness, mounting plate, and compartment panel, including rerouting the electrical harness and applying protective sealant. Corrective actions include re-positioning the elbow fitting, removing sealing tape, and repairing wiring. This service information also specifies procedures for an inspection for correct installation of the flexible lamp assembly; trimming and reidentifying a bracket; and for certain airplanes, an inspection for damage of the wire harness assembly; and applicable corrective actions. Corrective actions include correcting flexible lamp assembly installations and repair.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **Costs of Compliance**

The FAA estimates that this AD affects 407 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

### Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Up to 9 work-hours X \$85 per hour = Up to \$765	Up to \$115	Up to \$880	Up to \$358,160

#### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-26-04 MHI RJ Aviation ULC (Type Certificate Previously Held by Bombardier, Inc.):** Amendment 39-22283; Docket No. FAA-2022-0141; Project Identifier MCAI-2021-01052-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to all MHI RJ Aviation ULC (Type Certificate Previously Held by Bombardier, Inc.) Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, certificated in any category.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 35, Oxygen.

**(e) Unsafe Condition**

This AD was prompted by a report of an oxygen-fed ground fire event potentially caused by electrical arcing from a faulty surround light wire on the third crew member's (observer) oxygen mask. An investigation determined that the oxygen supply hose connecting to the rear of the observer oxygen mask box assembly could be subject to chafing damage. This AD was also prompted by the determination that additional inspections and a bracket trim are needed to address the unsafe condition. The FAA is issuing this AD to address possible damage to the observer oxygen mask supply hoses and a potential for an oxygen-fed fire in the vicinity of the observer oxygen mask storage compartment.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

Within 4,000 flight hours or 24 months, whichever occurs first after the effective date of this AD, do the actions in paragraphs (g)(1) and (2) of this AD:

(1) For airplanes on which the actions specified in MHI RJ Service Bulletin 601R-35-022, dated June 1, 2021; or MHI RJ Service Bulletin 601R-35-022, Revision A, dated October 12, 2021; have not been accomplished: Do the actions specified in paragraphs (g)(1)(i) and (ii) of this AD.

(i) Do a general visual inspection for discrepancies of the observer's oxygen mask stowage box and stowage compartment, the observer's mask oxygen hose connections, the hose routing, and the associated electrical harness; reroute the electrical harness and apply protective sealant in accordance with Part A. Section 2.B. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022. If any discrepancies are found, before further flight, do all applicable corrective actions,



in accordance with paragraph 2.B. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022.

(ii) Modify the oxygen mask flexible lamp harness, mounting plate, and compartment panel, including rerouting the electrical harness; apply protective sealant; inspect the flexible lamp assembly for correct installation; and trim and reidentify the bracket; in accordance with Part A. Section 2.B. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022. Do all applicable flexible lamp assembly installation corrections before further flight in accordance with Part A. Section 2.B. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022.

(2) For airplanes on which the actions specified in MHI RJ Service Bulletin 601R-35-022, dated June 1, 2021; or MHI RJ Service Bulletin 601R-35-022, Revision A, dated October 12, 2021; have been accomplished: Inspect the flexible lamp assembly for correct installation; inspect the wire harness assembly for damage; and trim and reidentify the bracket in accordance with Part B. Section 2.E. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022. Do all applicable flexible lamp assembly installation corrections and damage repair before further flight in accordance with Part B. Section 2.E. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022.

**(h) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN:

Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or MHI RJ Aviation ULC's Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(i) Additional Information**

(1) Refer to Transport Canada AD CF-2021-32R1, dated July 25, 2022, for related information. This Transport Canada AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0141.

(2) For more information about this AD, contact Gabriel Kim, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

**(j) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) MHI RJ Service Bulletin 601R-35-022, Revision B, dated April 21, 2022.

(ii) [Reserved]

(3) For service information identified in this AD, contact MHI RJ Aviation Group, Customer Response Center, 3655 Ave. des Grandes-Tourelles, Suite 110, Boisbriand, Québec J7H 0E2 Canada; North America toll-free telephone 833-990-7272 or direct-dial telephone 450-990-7272; fax 514-855-8501; email [thd.crj@mhirj.com](mailto:thd.crj@mhirj.com); website [mhirj.com](http://mhirj.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on December 15, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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